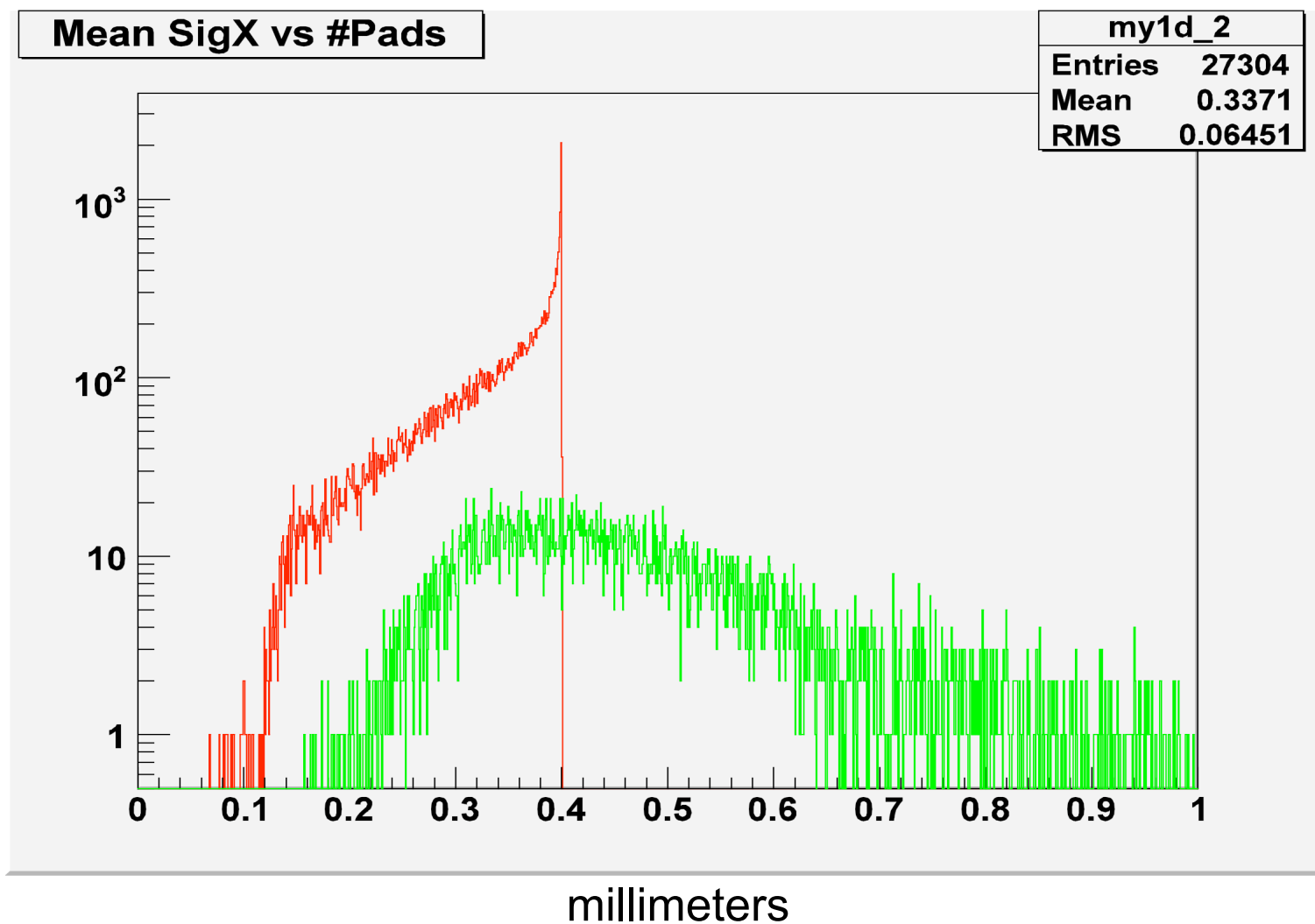


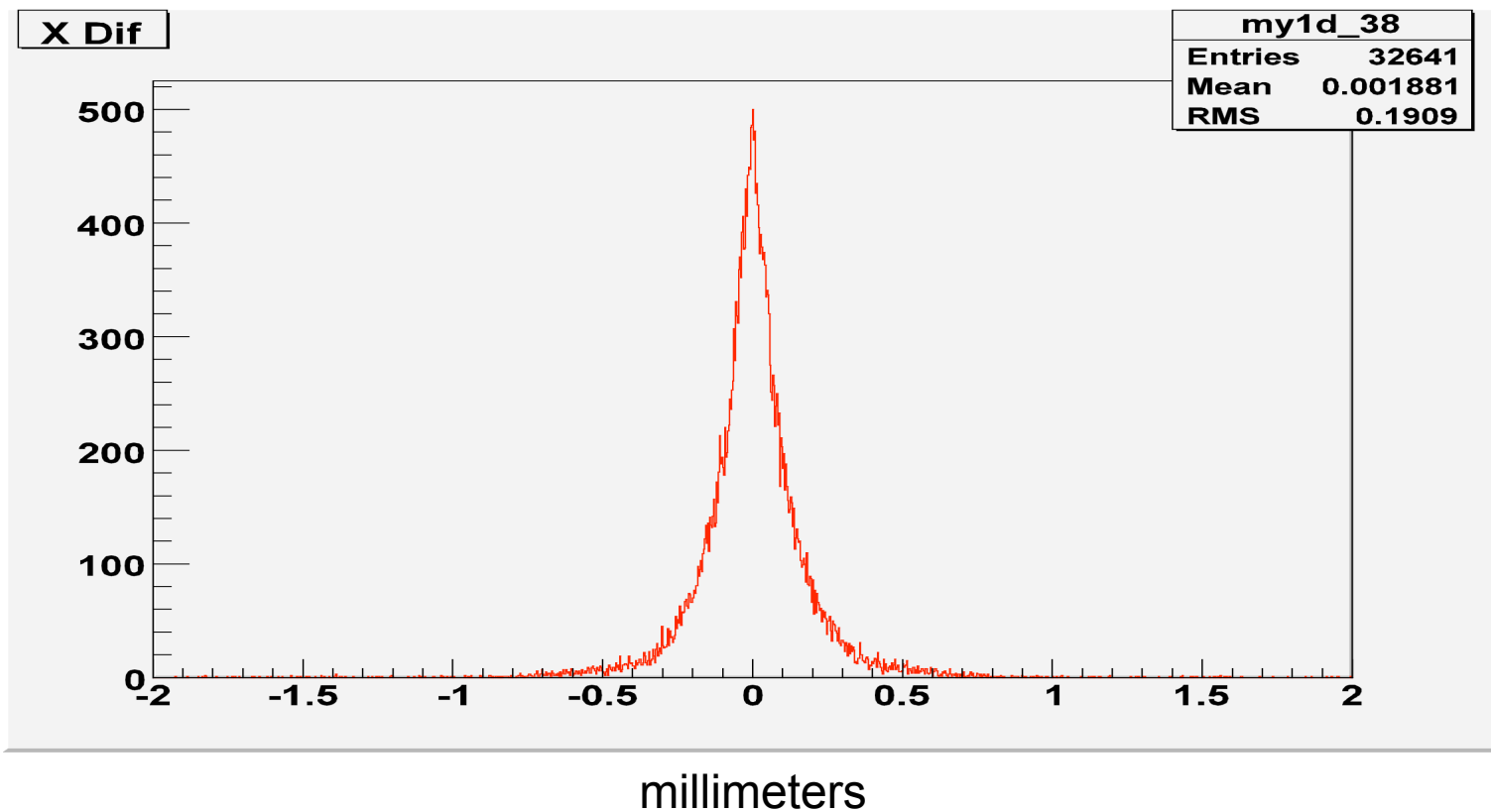
# Cluster Fitter

Single Hit Clusters

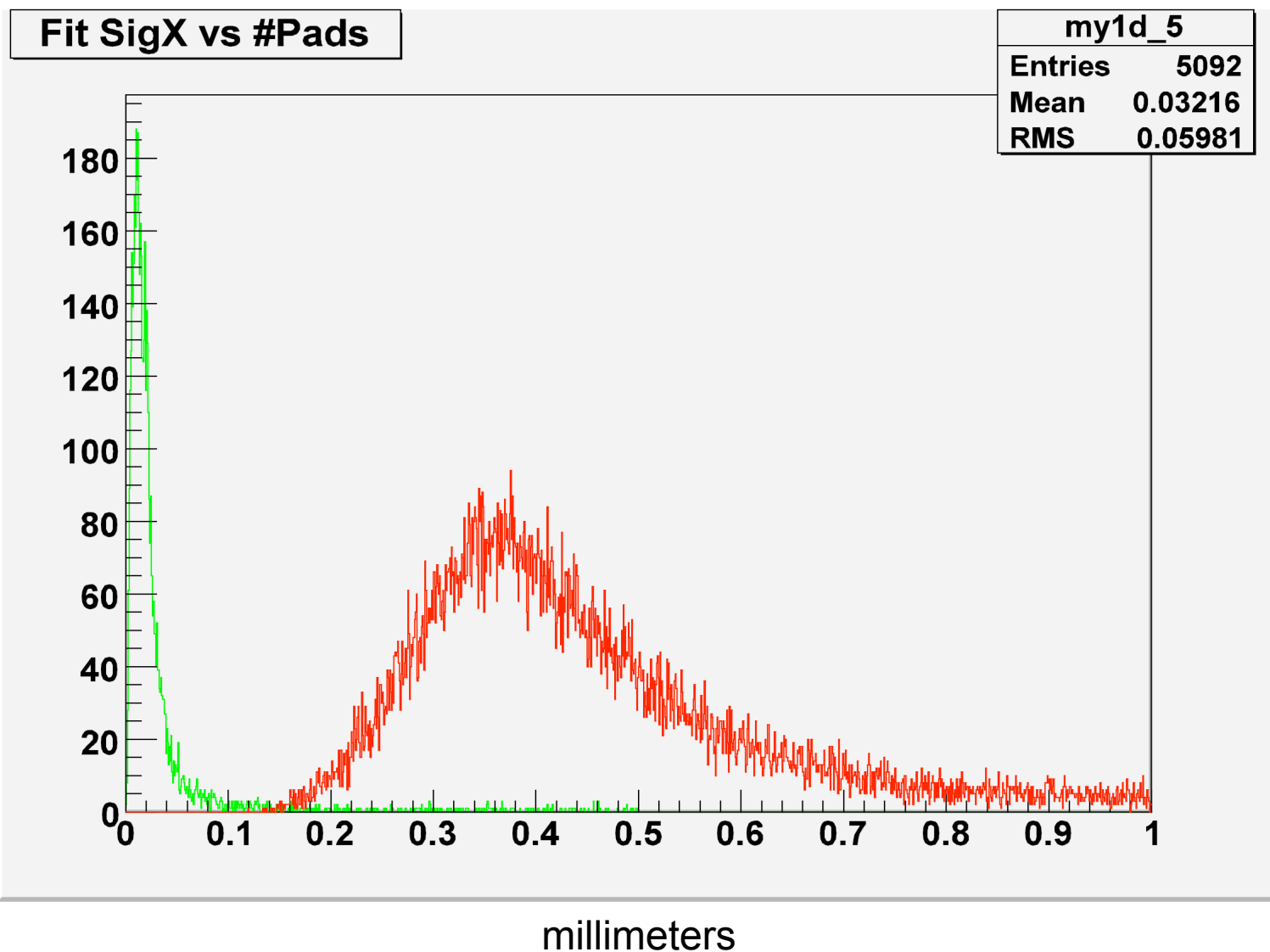


Red is for 2-Pad clusters. Green are  $> 2$  Pads per cluster.

# X-Mean – X-Fit

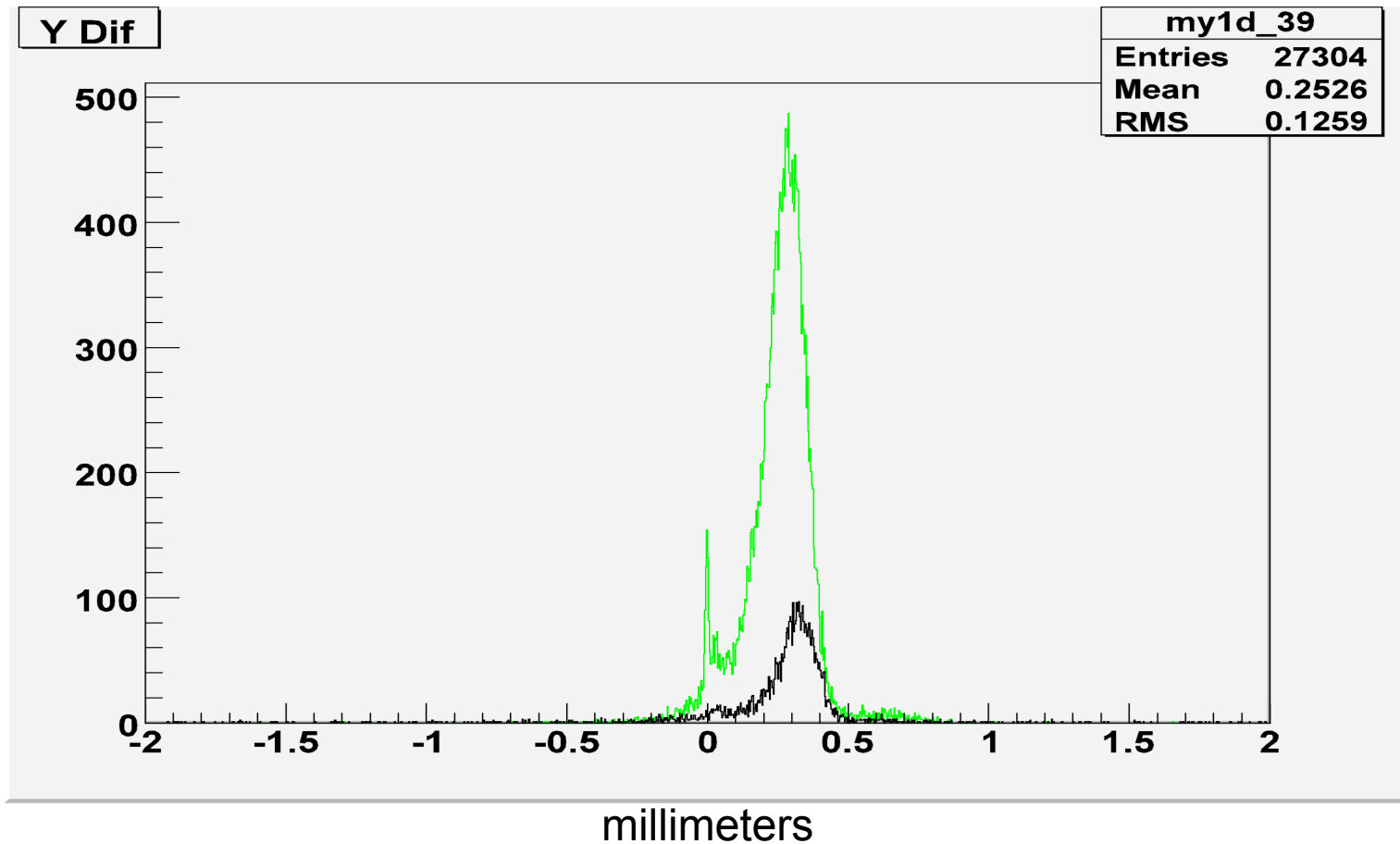


X Position offset between  
Mean and Fit corrected. Irregularity was due to matched units.



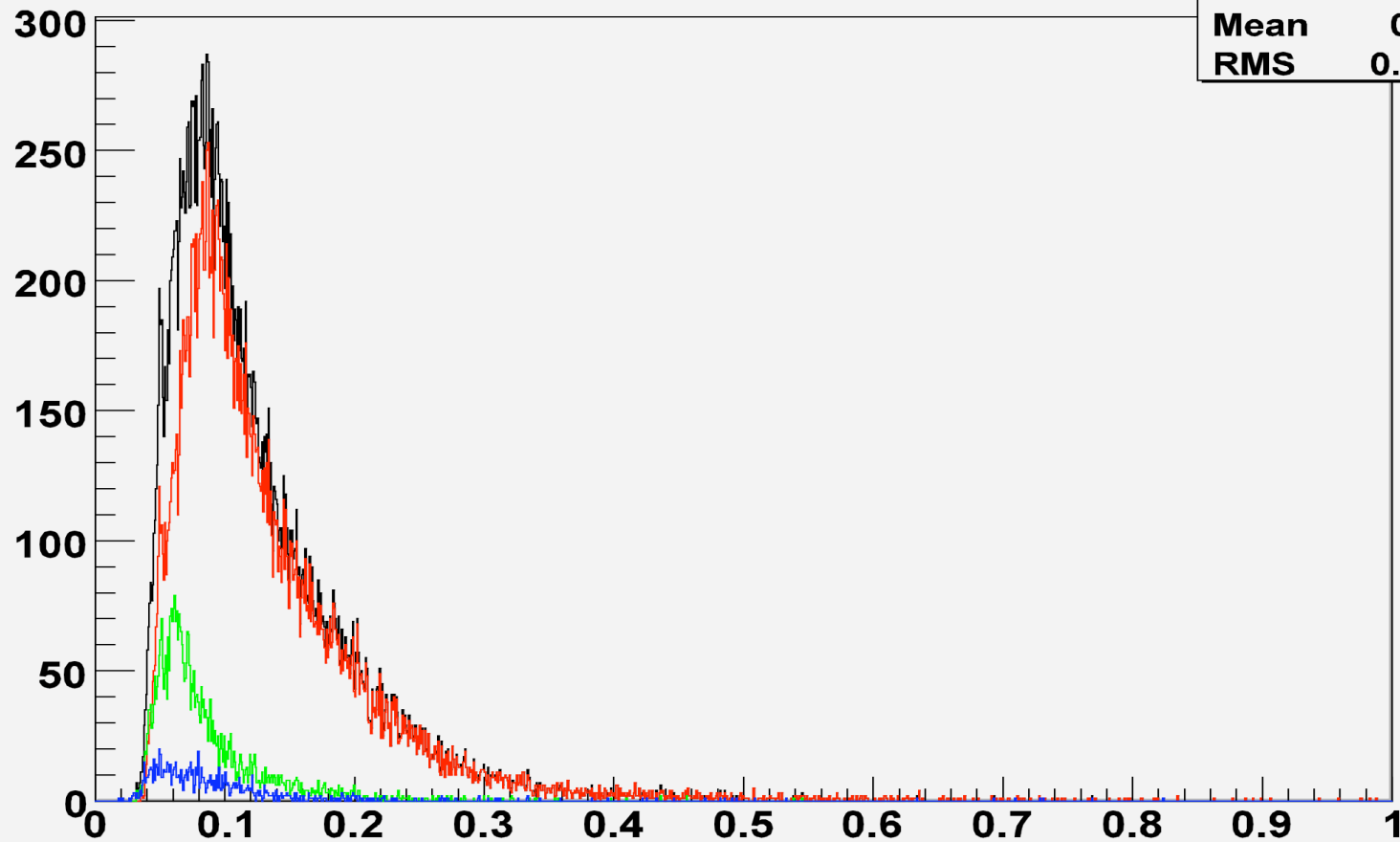
Red is for 2-Pad Clusters. Green is > 2 Pads per Cluster.

# Y-Mean – Y-Fit vs #Pads



Green is for 2-Pads. Black is for >2 Pads.

# Fit SigY vs #Pads



millimeters

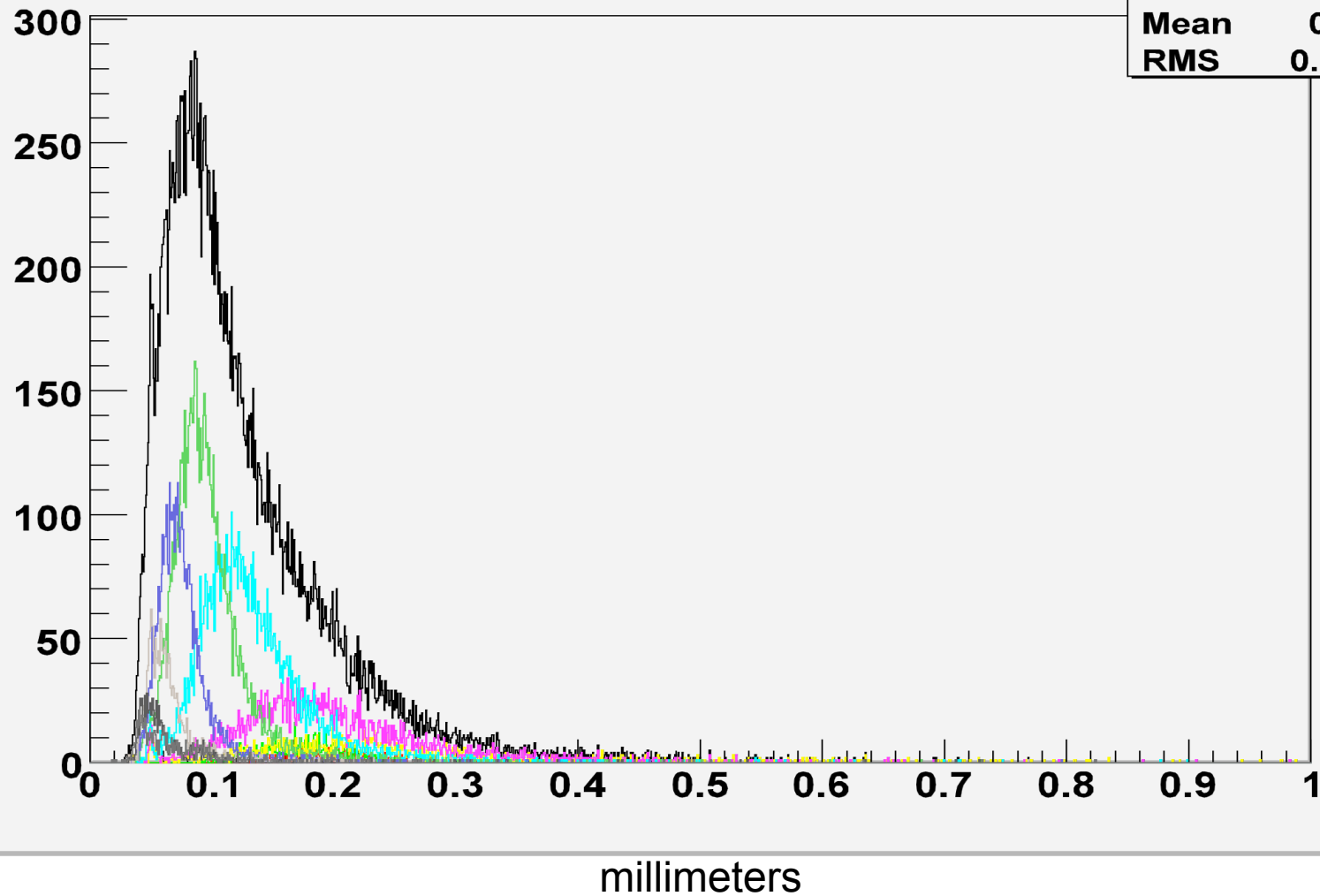
Black is the Full Distribution.

Red is 2-Pads.

Green is 3-Pads.

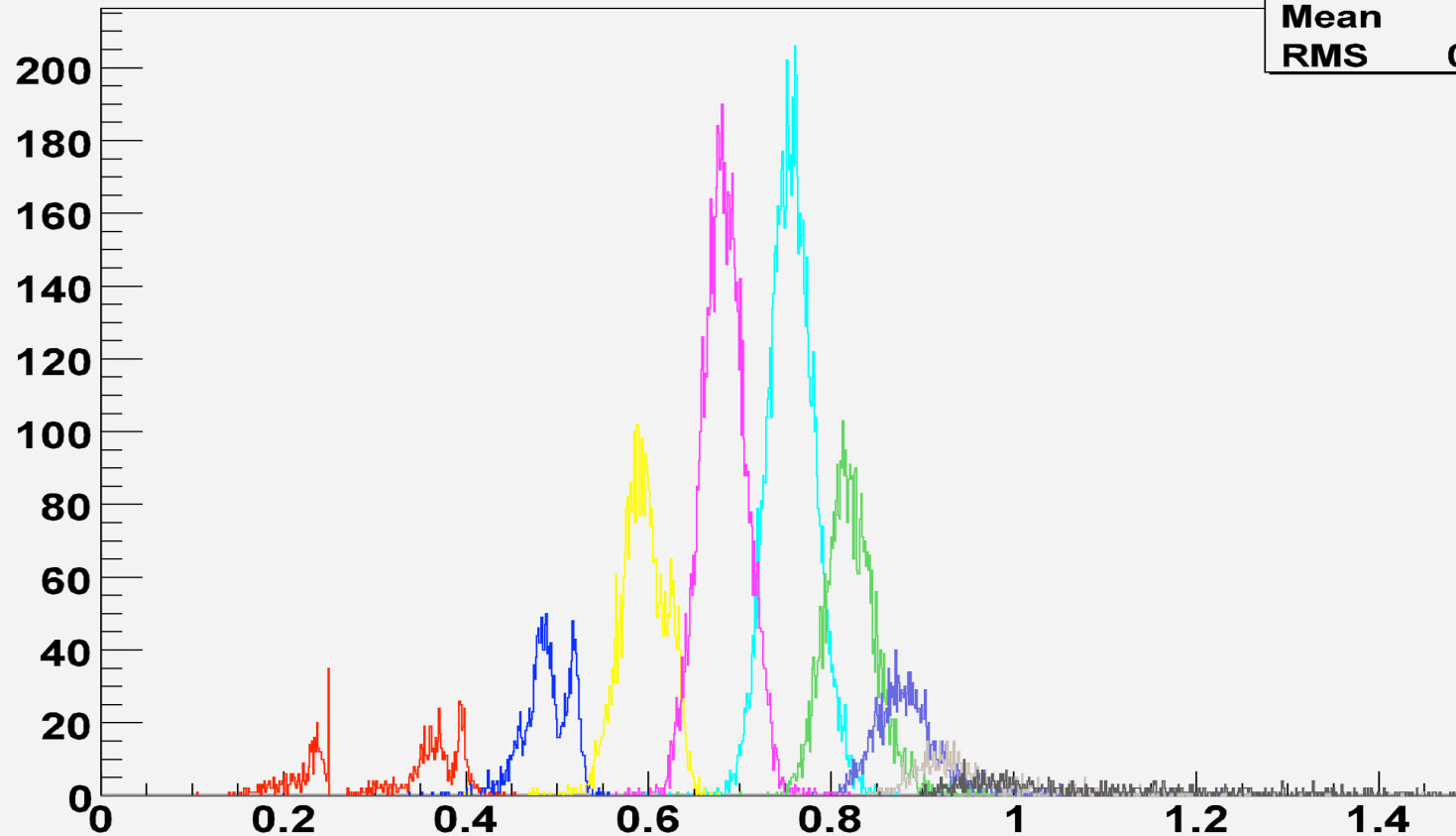
Blue is >3 Pads.

## Fit SigY vs #Buckets



Black is the Full Distribution.  
Green = 3 Buckets. Blue = 4. Yellow = 4.  
Pink = 5. Light Blue = 6. Dark Green = 7. (et cetera)

## Mean SigY vs #Buckets



millimeters

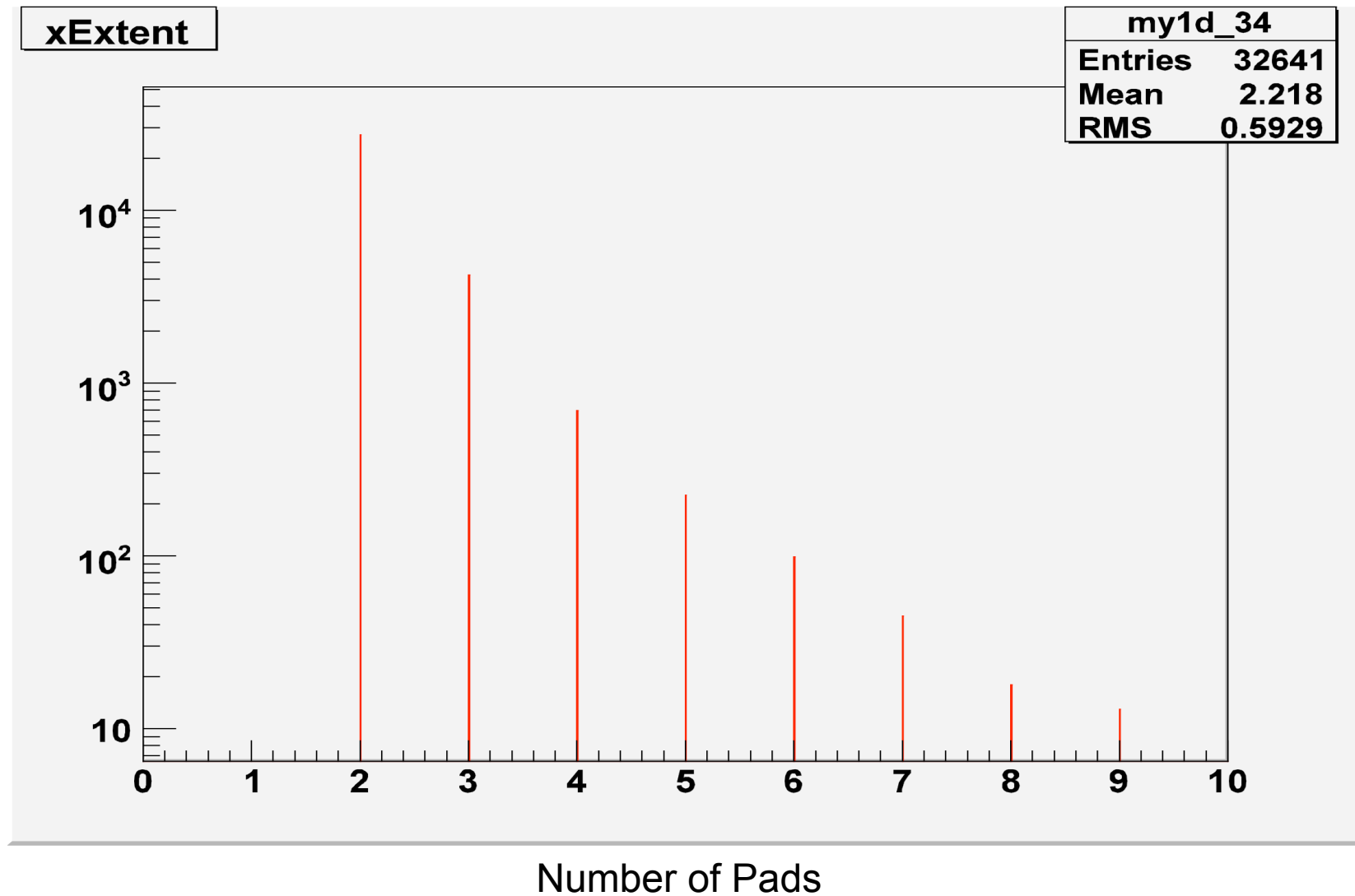
Black is the Full Distribution.

Red  $\leq 3$  Buckets. Blue = 4. Yellow = 5.

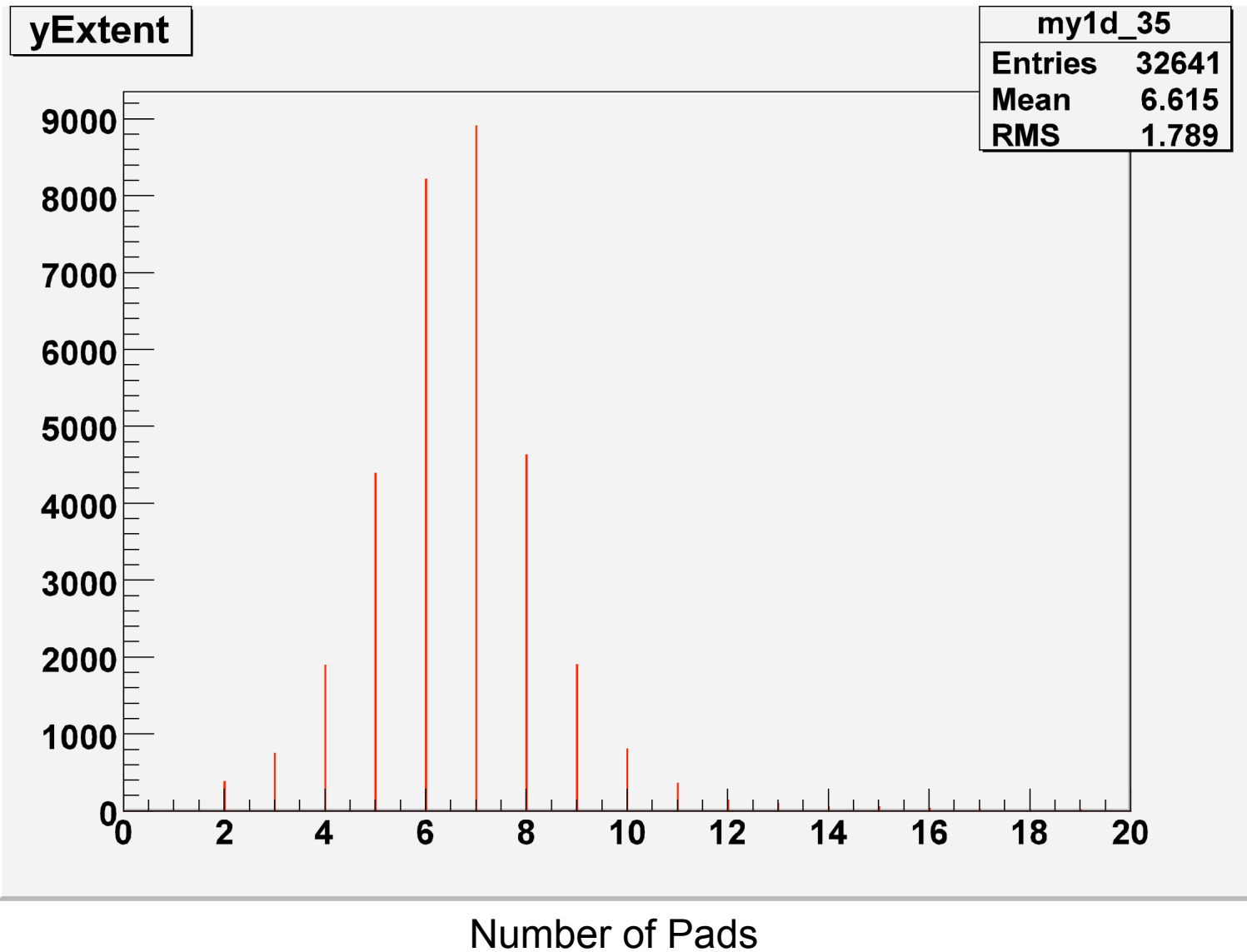
Pink = 6. Light Blue = 7. Dark Green = 8. (et cetera)



# Number of Pads per Hit

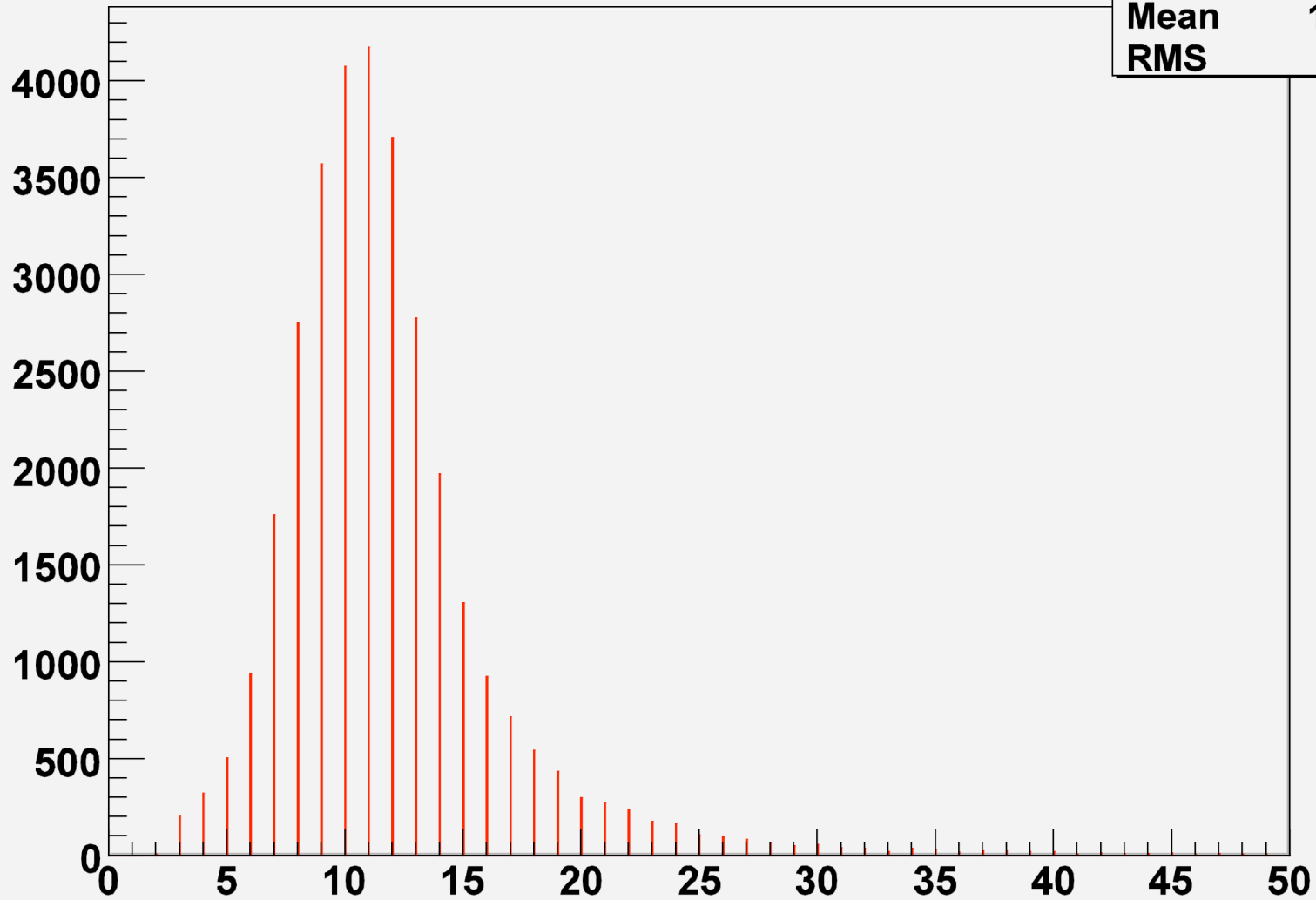


# Number of Buckets per Hit

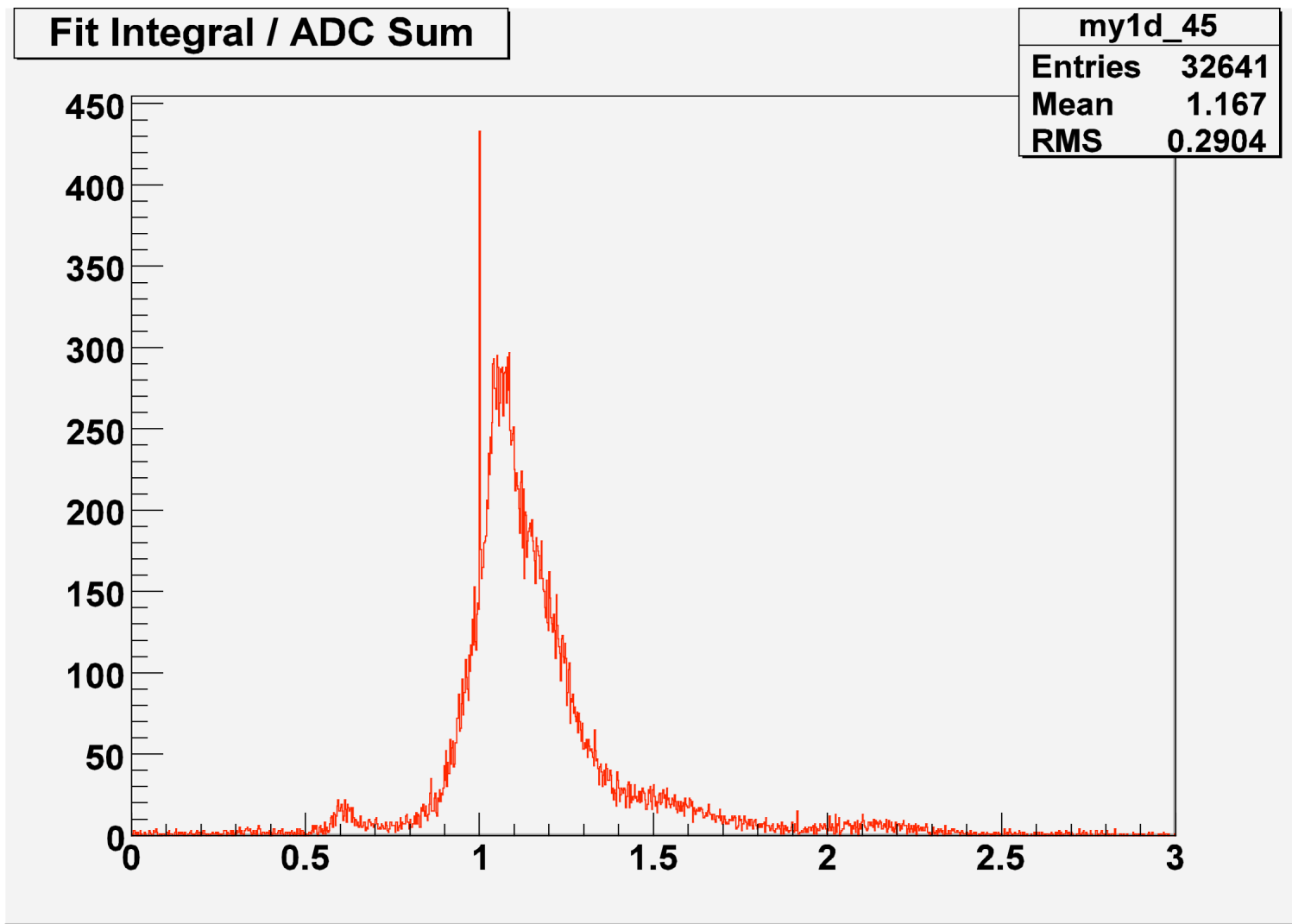


Area

my1d_33	
Entries	32641
Mean	11.81
RMS	4.81



Number of Voxels



The spike at 1 is due to Failed Fits defaulting to the Center of Mass Calculation  $\sim 1.3\%$  of the time.

# Some more Metrics.

- We find ~85% Single Hit Clusters in the TPC.
- We find an Average of ~1.2 Hits per Cluster.
- For Multiple Hit Clusters, we find an Average of ~2.3 Hits per Cluster.
- We Find ~1.3% Fit Failures falling back to the Center of Mass method.
- The Cluster Fitting Method is 6.7 times slower than the Center of Mass Method. This is still a small effect to the overall TPCReco Runtime.